WELL SUMMARY

Location ID: BLM-27-270 Field Representative(s): G. Contaldo, D. Menzie, J. Chapman-Fahey

Date Started: 05/01/91 Date Completed: 08/08/91

Northing: 228847.832 Easting: 412395.864

Brass Cap: 4729.75 Outer Casing: 4730.27 Inner Casing: 4730.95

Drilling Method: Mud and Air/Foam Rotary Drilling Contractor: Larjon Drilling Co.

Driller: J. Gower

Total Depth Borehole: 343.33' Total Depth Well Casing: 285.08' G.S.

Total Depth Surface Casing: 56'

Diameter Well Casing: 4" Diameter Surface Casing: 10"

Length of Bottom Blank: 5.26'

Type of Screen: Regular strength 0.02 slot

Screen Interval: 270' to 280'

Water First Detected: not detected while drilling Water Level Open Borehole: 232.38' T.O.D. (07/08/91)

Water Level Cased Borehole: 228.77 TOC (07/15/91)

Quik-Foam Use: 5.5 gal.

Estimated Water Use: 7200 gallons

Well Casing:

4in x 3ft SCD 40 PVC:
4in x 5ft SCD 40 PVC:
4in x 10ft SCD 40 PVC:
4in x 20ft SCD 40 PVC:
Total SCD 40 PVC pipe: ft

stock SS centralizers:
custom SS centralizers: yes
4"x2' SS locking riser: 1
4" SS locking cap: 1
4" SS female cap: 1 ft
Reg. strength 10' screen: 10 ft

4in x 3ft SCD 5 SS pipe:
4in x 5ft SCD 5 SS pipe: 1
4in x 10ft SCD 5 SS pipe:
4in x 20ft SCD 5 SS pipe:
Total SCD 5 SS pipe: 5 ft

4in x 5ft SCD 10 SS pipe:
4in x 10ft SCD 10 SS pipe: 27
4in x 20ft SCD 10 SS pipe:
Total SCD 10 SS pipe: 270 ft

Well Completion:

100# bags 16/40 sand:	15	bags
100# bags 10/20 sand:		bags
100# bags 8/14 sand:		bags
100# bags 8/20 sand:	13	bags
100# bags #3 sand:	30	bags

94# bags cement:	100	bags
5 gal. buckets bentonite:		buckets
50# bentonite powder:		bags
Benseal:	1	bags

Surface Casing:

94# bags cement:	30	bags
50# bags bentonite powder:	3	bags
Grout:	0	bags

Pertinent Field Notes:

05/01/91	Drilled to 40' with 12¼" bit (pilot hole) using mud rotary. - Contaldo
05/02/91	Drilled from 40'-56' with 12¼ bit. Reamed borehole to 56' using 16" ream bit. - Contaldo
05/03/91	Set 10" surface casing to 56' (G.S.). Grouted surface casing to ground surface. - Contaldo
06/24/91	Steam clean and mobilize BE rig and air/foam rotary equipment to site. - Menzie
06/25/91	Drilled 56'-85' with 9 7/8" tri-cone button bit, blew air-hose, fried filters, quit for day because replacement filter are the wrong ones. - Menzie
06/28/91	Drilled 85'-185' air/foam rotary, used 1200 gallons water, used 1.5 gallons foam. - Menzie
07/01/91	Drilled 185'-260' air/foam rotary, used 900 gallons water, used 1 gallon foam, andesite-rich alluvium at 235'. - Menzie

07/02/91 Measured water level in open borehole at 231.24' (top of deflector), sounded bottom of borehole at 258.58' (G.S.), bailed about 88 gallons of water from hole and measured water level at 242.90' (T. O. D.), monitored recovery to 239.00' in 32 minutes. - Menzie

07/03/91 Measured water level in open borehole at 232.85' (T.O.D.). Tripped in to 258' and drilled to 310'. Used 1200 gallons water and 1.5 gallons foam. - Menzie

07/08/91 Measured water level in open borehole at 232.38' (T.O.D.), drilled air/foam rotary 310'-342', top of tuff bedrock at 340', used 1500 gallons water, used 221.5 gallons foam. - Menzie

07/09/91 Measured water in open borehole at 246.68' (T.O.D.). Sounded bottom of hole at 343.33' (G.S.). Demobilize air/foam rotary equipment from site. - Menzie

07/10/91 Run full suite of geophysical logs, measure water level at 239.74' (G.S.), install filler sand to 298' and pump lower benseal plug. - Menzie

07/11/91 Run 287.53' of casing with 10' screen, install gravel pack, pump upper benseal plug and install filler sand to 223.33 (G.S.) - Menzie

07/12/91 Bail water level down to 278.30' (G.S.) and monitor recovery, pour 1st load of grout to surface. - Menzie

07/15/91 Bail for initial development (60 gal.), install casing protector. - Menzie

07/16/91 Set ½ horsepower submersible pump at 272' and begin pumping for development. - Menzie

07/17/91 - 08/07/91 Continue development by pumping. - Menzie and Fahey

08/08/91 Complete development and remove submersible pump. - Fahey